

Please type a plus sign (+) inside the box



PTO/SB/81 (11/96)  
Approved for use through 6/30/99. OMB 0651-0035  
Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**POWER OF ATTORNEY OR  
AUTHORIZATION OF AGENT,  
NOT ACCOMPANYING  
APPLICATION**

Application Number	09/217,183
Filing Date	December-21, 1998
First Named Inventor	Derry D.J. Allman
Group Art Unit	2874
Examiner Name	
Attorney Docket Number	198-027



I hereby appoint:

Practitioners at Customer Number

Place Customer  
Number Bar Code  
Label Here

OR

Practitioner(s) named below:

Name	Registration Number
DAVID PURSEL	28,659
RALPH VESELI	33,807
SANDEEP JAGGI	43,331
BRUCE HOPENFELD	39,714

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the Patent and Trademark Office connected therewith.

**This communication is NOT intended to revoke any existing powers of attorney or authorizations of agent.**

Please change the correspondence address for the above-identified application to:

The above mentioned Customer Number

AUG 04 1998

OR

<input checked="" type="checkbox"/> Firm or Individual Name	LSI LOGIC CORPORATION				
Address	1551 McCarthy Blvd., MS: D-106				
Address	Patent Law Department				
City	MILPITAS	State	CA	ZIP	95035
Country	USA				
Telephone	408-433-8708	Fax	408-433-7770		

I am the:

Applicant

Assignee of Record of the entire interest

*Certificate under 37 CFR 3.73(b) is enclosed.*

**SIGNATURE of Applicant or Assignee of Record**

Name	DAVID G. PURSEL, Associate General Counsel and Corporate Assistant Secretary, LSI Logic Corp.
Signature	<i>D.G. Purzel</i>
Date	5/31/98

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

---

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In re Application of :**

Derryl D.J. Allman et. al.

**Serial No. :** 09/217,183

**Group Art Un** 2874

**Filed :** December 21, 1998

**Examiner:**

**For :** Damascene Process to form On-Chip Optical Waveguides

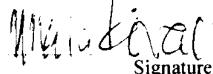
**Atty Docket :** / 98-027

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington D.C. 20231, on the date indicated below:

Maria Kovacs

7/10/99

Date



Signature

**CERTIFICATION UNDER 37 C.F.R. 3.73(b)**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

LSI Logic Corporation, a California corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of the acquisition of the original assignee, Symbios Logic Inc.

**The documents verifying LSI Logic's ownership are attached herewith. Additionally, a copy of the original assignment from the inventor(s) to Symbios is attached.**

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of the undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements, and the like so made, are punishable by fine or imprisonment, or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

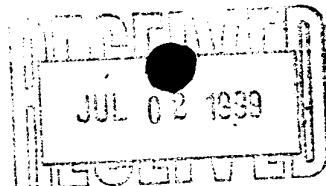
LSI Logic Corporation  
1551 McCarthy Blvd., MS D-106  
Milpitas, CA 95035  
(408) 433-8708

Date: 5/31/99

Respectfully submitted,

  
David G. Pursel  
Associate General Counsel  
Corporate Assistant Secretary  
LSI LOGIC CORPORATION

  
AUG 04 1999  
REC'D U.S. PATENT & TRADEMARK OFFICE



JUNE 18, 1999

PTAS

WAYNE P. BAILEY  
2001 DANFIELD COURT  
FORT COLLINS, CO 80525

418-02+

UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231



\*101007942A\*



UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 04/05/1999

REEL/FRAME: 9872/0523  
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNEE'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNEE:

HORNBACK, VERNE C.

DOC DATE: 02/11/1999

ASSIGNEE:

ALLMAN, DERRYL D.J.

DOC DATE: 02/11/1999

ASSIGNEE:

LSI LOGIC CORPORATION  
1551 MCCARTHY BLVD.  
MILPITAS, CALIFORNIA 95035

SERIAL NUMBER: 09217183

FILING DATE: 12/21/1998  
PATENT NUMBER:

TONYA LEE, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

AUG 0 1999

RECORDED - 1213 JEFFERSON DAVIS HWY

04-13-1999



101007942

Docket No.: 98-027

SHEET

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Tab settings ➡ ➡ ➡ ➡ ➡

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

Verne C. Hornback and Darryl D.J. Allman

Additional names(s) of conveying party(ies)  Yes  No

3. Nature of conveyance:

Assignment  Merger  
 Security Agreement  Change of Name  
 Other \_\_\_\_\_

Execution Date: 2/11/99

4. Application number(s) or registration numbers(s):

If this document is being filed together with a new application, the execution date of the application is: \_\_\_\_\_

A. Patent Application No.(s)

09/217,183

B. Patent No.(s)

Additional numbers attached?  Yes  No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Wayne P. Bailey

Internal Address: \_\_\_\_\_

Street Address: 2001 Danfield Court

04/09/1999 DNGUYEN 00000359 122252 09217183

01 FC:581 40.00 CH

City: Fort Collins State: CO ZIP: 80525

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): ..... \$ 40.00

Enclosed - Any excess or insufficiency should be credited or debited to deposit account

Authorized to be charged to deposit account

8. Deposit account number:

12-2252

AUG 04 1999

DO NOT USE THIS SPACE

9. Statement and signature.

*To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.*

Kathleen M. Manke

3/31/99

Name of Person Signing

Signature

Date

Total number of pages including cover sheet, attachments, and document: 5

## ASSIGNMENT OF UNITED STATES PATENT APPLICATION

WHEREAS, we, **Verne C. Hornback** of Colorado Springs, CO; and **Derryl D. J. Allman**, of Colorado Springs, CO, have invented certain new and useful improvements in a **ON-CHIP GRADED INDEX OF REFRACTION OPTICAL WAVEGUIDE AND DAMASCENE METHOD OF FABRICATING THE SAME**, Docket No. 98-027, for which we have executed an application for Letters Patent of the United States on December 18, 1998 and December 21, 1998, respectively; and

WHEREAS, LSI Logic Corporation, a corporation of the State of Delaware, having its principal place of business in Milpitas, California, is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be granted therefor in the United States and any and all foreign countries;

NOW, THEREFORE, be it known that for good and valuable consideration, receipt of which is hereby acknowledged, we do hereby sell, assign and transfer unto said LSI Logic Corporation, its successors and assigns, the entire right, title and interest in and to the invention and improvements in any form or embodiment thereof, disclosed and claimed in said application, or which are disclosed and may be claimed; also the entire right, title and interest in and to any Letters Patent to be granted in the United States and its territorial possessions and in any and all foreign countries upon said invention in any form or upon any such improvements thereon, and in and to any and all divisions, reissues, continuations and extensions thereof; and we hereby authorize and request the Commissioner of Patents and Trademarks to issue any Letters Patent on said application to the said LSI Logic Corporation, of Delaware, its successors and assigns.

Further, we agree that we will communicate to said LSI Logic Corporation, or its representatives, any facts known to us respecting said invention, and testify in any legal proceeding,

Signed at Colorado Springs, Colorado this 11 day of February, 1999.

Derryl D. J. Allman  
Derryl D. J. Allman

STATE OF COLORADO )  
 ) ss:  
COUNTY OF EL PASO )

On this 11 day of February, 1999, before me personally appeared **Derryl D. J. Allman**, to me personally known and known to be the person who signed the foregoing assignment, and acknowledged the signing thereof as his free act and deed.

(SEAL)

Clark Culpepper  
Notary Public

sign all lawful papers, execute all divisional, continuation, substitution, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said LSI Logic Corporation, make all rightful oaths and generally to do everything possible to aid said LSI Logic Corporation, its successors and assigns, to obtain and enforce protection for said invention in the United States and in any and all foreign countries.

Signed at Colorado Springs, Colorado this 11 day of February, 1999.

Verne C. Hornback  
Verne C. Hornback

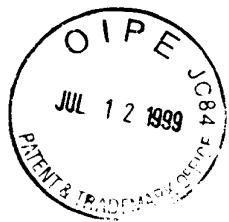
STATE OF COLORADO )  
 ) ss:  
COUNTY OF EL PASO )

On this 11 day of February, 1999, before me personally appeared **Verne C. Hornback**, to me personally known and known to be the person who signed the foregoing assignment, and acknowledged the signing thereof as his free act and deed.

(SEAL)

Derek Culpepper  
Notary Public

**CERTIFICATE OF OWNERSHIP**  
**MERGING LSI LOGIC (fsi), INC.**  
**INTO LSI LOGIC CORPORATION**



LSI Logic Corporation, a corporation incorporated on June 11, 1987 pursuant to the provisions of the Delaware General Corporation Law (the "Corporation"), does hereby certify that this Corporation owns all of the capital stock of LSI Logic (fsi), Inc., a corporation incorporated under the laws of Delaware (the "Subsidiary") and that this Corporation, by resolutions of its board of directors duly adopted pursuant to an Action by Written Consent of the Board of Directors dated March 30, 1999 and filed with the minutes of the Board of Directors, determined to and did merge into itself said Subsidiary which resolutions are in the following words:

WHEREAS this Corporation lawfully owns all of the outstanding stock of Subsidiary, a corporation organized and existing under the laws of Delaware, and

WHEREAS this Corporation desires to merge into itself the Subsidiary and to be possessed of all the estate, property, rights, privileges and franchises of said Corporation.

NOW, THEREFORE, BE IT RESOLVED, that this Corporation merge into itself, and does hereby merge into itself, Subsidiary and assumes all of its liabilities and obligations, and

FURTHER RESOLVED, that the proper officer of this Corporation be and he or she hereby is directed to make and execute, a certificate of ownership setting forth a copy of these resolutions, to merge Subsidiary and assume its liabilities and obligations, and the date of adoption thereof, and to file the same in the office of the Secretary of State of Delaware, and

FURTHER RESOLVED, that the officers of this Corporation be and they hereby are authorized and directed to do all acts and things whatsoever, whether within or without the state of Delaware, which may be in any way necessary or proper to effect said merger.

IN WITNESS WHEREOF, said Corporation has caused this certificate to be signed by David E. Sanders, its Vice President, General Counsel and Secretary.

Dated: March 30, 1999

LSI LOGIC CORPORATION

By: David E. Sanders  
David E. Sanders  
Vice President, General Counsel and  
Secretary

RECORDED

AUG 04 1999

STATE OF DELAWARE  
CERTIFICATE OF AMENDMENT  
OF CERTIFICATE OF INCORPORATION



Symbios, Inc.

a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware.

**DOES HEREBY CERTIFY:**

**FIRST:** That at a meeting of the Board of Directors of Symbios, Inc.

resolutions were duly adopted setting forth a proposed amendment of the Certificate of Incorporation of said corporation, declaring said amendment to be advisable and calling a meeting of the stockholders of said corporation for consideration thereof. The resolution setting forth the proposed amendment is as follows:

**RESOLVED**, that the Certificate of Incorporation of this corporation be amended by changing the Article thereof numbered " 1. Name " so that, as amended, said Article shall be and read as follows:

The name of the corporation is "LSI Logic (fsi), Inc."

**SECOND:** That thereafter, pursuant to resolution of its Board of Directors, a special meeting of the stockholders of said corporation was duly called and held upon notice in accordance with Section 222 of the General Corporation Law of the State of Delaware at which meeting the necessary number of shares as required by statute were voted in favor of the amendment.

**THIRD:** That said amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

**FOURTH:** That the capital of said corporation shall not be reduced under or by reason of said amendment.

**IN WITNESS WHEREOF**, said Symbios, Inc.

has caused this certificate to be signed by

David E. Sanders, an Authorized Officer,  
this 31 day of August, 19 98.

By: David E. Sanders  
Authorized Officer

Name: David E. Sanders  
Print or Type

RECEIVED

Title: Secretary AUG 04 1999

DEPARTMENT OF STATE

*State of Delaware*  
*Office of the Secretary of State*

PAGE 1



I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF OWNERSHIP, WHICH MERGES:

"LSI LOGIC (FSI), INC.", A DELAWARE CORPORATION, WITH AND INTO "LSI LOGIC CORPORATION" UNDER THE NAME OF "LSI LOGIC CORPORATION", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE FIRST DAY OF APRIL, A.D. 1999, AT 3 O'CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

*RECEIVED*

AUG 04 1999

TELE-LOGIC CENTER 2000

2109844 8100M

991129345



*Edward J. Freel*  
Edward J. Freel, Secretary of State

AUTHENTICATION:

9666986

DATE:

04-05-99

State of Delaware  
Office of the Secretary of State

PAGE 1



I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE RESTATED CERTIFICATE OF "LSI LOGIC (FSI), INC.", FILED IN THIS OFFICE ON THE TWENTY-SECOND DAY OF DECEMBER, A.D. 1998, AT 10 O'CLOCK A.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

RECEIVED

AUG 04 1999

RECORDED IN DEEDS





Edward J. Freel, Secretary of State

2479574 8100

981494751

AUTHENTICATION:

9487786

DATE:

12-28-98

AMENDED AND RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
LSI LOGIC (fsi), INC.



John J. D'Errico and David E. Sanders each hereby certifies that:

(1) They are the President and Secretary, respectively, of LSI Logic (fsi), Inc., a Delaware corporation, the original Certificate of Incorporation of which was filed with the Secretary of State of the State of Delaware on February 9, 1995 under the name of Symbios Logic Inc.

(2) The Certificate of Incorporation of this corporation is amended and restated in its entirety to read as follows:

**"FIRST:** The name of this corporation is LSI Logic (fsi), Inc. (the "Corporation").

**SECOND:** The address of the Corporation's registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, zip code 19801. The name of its registered agent at such address is The Corporation Trust Company.

**THIRD:** The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of the State of Delaware.

**FOURTH:** The Corporation is authorized to issue one class of stock to be designated Common Stock. The total number of shares of Common Stock the Corporation shall have authority to issue is 1,000 shares. The par value of the Common Stock shall be \$0.001 per share. Upon the filing hereof, each forty thousand (40,000) outstanding shares of Common Stock of the Corporation shall be converted into one (1) share of Common Stock of the Corporation.

RECORDED

AUG 04 1999

Page 1

RECORDED AND INDEXED

FIFTH: Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

SIXTH: In connection with the election of directors, the stockholders shall be entitled to cumulate their votes as provided in Section 214 of the General Corporation Law of the State of Delaware.

SEVENTH: In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to make, alter, amend or repeal the Bylaws of the Corporation; provided, however, that the stockholders may amend the Bylaws to provide that any provision(s) of the Bylaws concerning the size of the Board of Directors may not be further amended by the Board of Directors. Any such amendment shall explicitly state which particular provision(s) of the Bylaws may not be further amended by the Board of Directors.

EIGHTH: To the fullest extent permitted by the Delaware General Corporation Law as the same exists or as may hereafter be amended, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director.

The Corporation shall indemnify to the fullest extent permitted by law any person made or threatened to be made a party to an action or proceeding, whether criminal, civil, administrative or investigative, by reason of the fact that he or she or his or her testator or intestate is or was a director, officer or employee of the Corporation or any predecessor of the Corporation or serves or served any other enterprise as a director, officer or employee at the request of the Corporation or any predecessor to the Corporation.

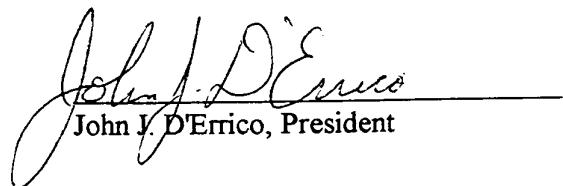
Neither any amendment nor repeal of this Article Eighth, nor the adoption of any provision of this Certificate of Incorporation inconsistent with this Article Eighth, shall eliminate or reduce the effect of this Article Eighth in respect of any matter occurring, or any cause of action, suit or claim accruing or arising or that, but for this Article Eighth, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision."

(3) The Board of Directors has given written consent to the foregoing Amended and Restated Certificate of Incorporation in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

(4) The sole stockholder of the Corporation has given written consent to the foregoing Amended and Restated Certificate of Incorporation in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

(5) The aforementioned Amended and Restated Certificate of Incorporation was duly adopted in accordance with the applicable provisions of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, the undersigned have executed this Amended and Restated Certificate of Incorporation on this 21st day of December, 1998.



John J. D'Errico  
John J. D'Errico, President

Attest:



David E. Sanders  
David E. Sanders, Secretary